

REMARKS

The Applicant thanks the Examiner for the thorough consideration given the present application. Claims 1-18 are currently being prosecuted. Claims 1-18 have been amended. Claim 1 is independent. The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks as set forth herein.

Claim for Priority

It is gratefully acknowledged that the Examiner has recognized the Applicant's claim for foreign priority. In view of the fact that the Applicant's claim for foreign priority has been perfected, no additional action is required at this time.

Drawings

The Official Draftsperson has not approved the formal drawings submitted by the Applicant. It is respectfully submitted that the drawings comply with the requirements of the USPTO. If the Official Draftsperson has any objections to the formal drawings, s/he is respectfully requested to contact the undersigned as soon as possible so that the appropriate action may be taken.

Acknowledgement of Information Disclosure Statement

The Examiner has acknowledged the Information Disclosure Statement filed on January 5, 2001. An initialed copy of the Form PTO-1449 has been returned by the Examiner. No further action is necessary at this time.

Objection to the Specification

The Examiner has objected to the specification because of informalities. In order to overcome this objection, the Applicant has amended the specification to correct the deficiencies pointed out by the Examiner, and to correct an obvious translating error, changing “strapped” to “stacked” throughout the application. Reconsideration and withdrawal of the objection to the specification are, therefore, respectfully requested.

Objection to the Claims

The Examiner has objected to claims 3, 6, and 15-18 because of informalities. In order to overcome this objection, the Applicant has amended the claims to correct the deficiencies pointed out by the Examiner and to place the claims in standard U.S. format. Reconsideration and withdrawal of this objection are respectfully requested.

Rejection Under 35 U.S.C. §112, second paragraph

Claims 1, 6, and 15-18 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In order to overcome this objection, the Applicant has amended the claims to correct the deficiencies pointed out by the Examiner and to place the claims in standard U.S. format. In answer to the Examiner’s question in paragraph 2 of the Office Action regarding the claims, the “number...is larger than one” refers to the quantity, not the size of the actuator means (drive units).

The Applicant respectfully submits that the claims, as amended, particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejections under 35 U.S.C. §102(b) and §103(a)

Claims 1-4, 7, and 9-11 stand rejected under 35 U.S.C. §102(b) as being anticipated by Korhonen, WO 96/20121. Further, claims 5 and 12-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Korhonen, as applied to claims 1-4 above, and in further view of Anderson (U.S. 5,492,067) and Suzuki et al. (U.S. 4,702,008); claims 6 and 15-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Korhonen, as applied to claims 1-4 above, and in further view of Curran (U.S. 4,976,336); claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Korhonen, as applied to claims 1 and 7 above, and in further view of Johansson (U.S. 5,836,254); and claim 18 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Korhonen, Anderson, and Suzuki et al. as applied to claim 5 above, and in further view of Curran.

These rejections are respectfully traversed.

The Applicant has amended independent claim 1 of the present invention to include a novel combination of elements not taught or suggested by any of the prior art cited by the Examiner.

Specifically, the present invention as set forth in instantly amended claim 1 is directed to an apparatus for handling stacked units of boards, and includes a combination of elements including "lift units being rotatably mounted on pivot shafts (39, 40)".

The Examiner will note that the above combination of elements is fully supported by FIG. 4 and page 6, lines 8 and 9, of the specification.

By contrast, a careful review of the Korhonen reference cited by the Examiner indicates that Korhonen merely discloses lift units (15) which are *not* rotatably mounted on pivot shafts. Furthermore, none of the other references cited by the Examiner discloses the combination of elements contained in claim 1 of the present invention.

Accordingly, the Examiner's rejection under 35 U.S.C. §102(b) has been obviated. Independent claim 1 is now in condition for allowance.

Regarding claims 2-4, 7, and 9-11, which stand rejected under 35 U.S.C. §102(b), and claims 5, 6, 8, 12-18, which stand rejected under 35 U.S.C. §103(a), these claims are now allowable due to their dependence on allowable claim 1, as well as for the additional limitations contained therein.

Accordingly, the Applicant respectfully submits that all claims of the present application should be deemed allowable.

CONCLUSION

In view of the above amendments and remarks, reconsideration of the rejections and allowance of all of the claims are respectfully requested.

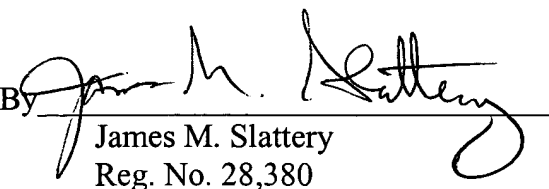
Since the remaining patents cited by the Examiner have not been utilized to reject claims, but merely to show the state of the art, no comment need be made with respect thereto.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please rewrite the paragraph beginning on page 1, line 3, as follows:

The present invention relates to an apparatus [according to the preamble of claim 1] for handling [strapped] bundles of boards[. The invention further concerns] and to a support bed [according to claim 7] therefor.

Please rewrite the paragraph beginning on page 1, line 7, as follows:

Apparatuses of the type concerned in the invention are used, e.g., in the storage systems of various board products. One such apparatus is described in [publication] WO 96/20121. The apparatus includes a storage area in which units of [strapped] stacked bundles are stored [in stacks]. The end-to-end stored stacks of units form a storage row. The number of successive stacks in a storage row, as well as the number of parallel storage rows, may be varied as required. The units are stacked on a support bed[,] or a pallet. A stacker carrier is arranged to move the stacked units and their support beds in the storage area. The stacker carrier is of a so-called lukki-type straddle carrier in which the unit to be lifted and transferred is held between the high-rise legs of the straddle carrier chassis. The straddle carrier is adapted to move along a track of rails. The straddle carrier includes a lift device suited for moving the [strapped] stacked units of boards with their support beds to the storage stacks and away therefrom. The lift device of the straddle carrier includes grip members, or

grabbers, connected to each other at their upper ends by transverse beams. Due to the structure of the lift device and other accessories, this straddle carrier embodiment of a conventional construction needs substantial extra space about its upper end. Moreover, the construction of the lift device allows the straddle carrier when unloaded to be elevated to its desired operating height only at its target location.

Please rewrite the paragraph beginning on page 1, line 31, and ending on page 2, line 3, as follows:

The invention is principally characterized by lift units adapted to the opposite sides of the stacker carrier, said lift units being individually movable and arranged to cooperate so as to elevate/lower the [strapped] units of boards resting on a support bed.

Please amend the paragraph beginning on page 2, line 8, as follows:

The arrangement according to the invention has a number of significant benefits. The space required by the apparatus has been reduced substantially. The combination according to the invention of a support bed with cooperating grip members provides a construction which is superior to the prior art in simplicity and reliability. The stacker carrier according to the invention offers a more efficient utilization of a storage area. Moreover, the construction costs of the apparatus are reduced. The operating speed of the apparatus has been improved inasmuch as the unloaded grip members can be moved in the vertical direction during the travel of the stacker carrier unhindered by the board stacks resting in the

storage area. [Resultingly] As a result, a storage capacity vastly greater than that available in the prior art is attained.

Please amend the paragraph beginning on page 3, line 8, as follows:

In Fig. 1 is shown an embodiment suitable for utilizing an apparatus according to the invention. The embodiment comprises a storage area 1 in which [strapped] stacked units 2 of boards are stored in stacks. The successive board stacks 3 form a storage row. The number of successive stacks of units in a row, as well as the number of parallel storage rows, may be varied as required. The [strapped] stacked units 2 are stacked on a support bed 4 [called], referred to below as a "pallet" [later in the text]. Transfer of the units 2 and the pallets 4 in the storage is arranged by means of a stacker carrier 5. The stacker carrier 5 is advantageously of the wheeled straddle carrier type also known as a lukki carrier, whereby the [strapped] stacked unit to be lifted and transferred is moved elevated between the high-rise wheeled legs of the stacker carrier. The stacker carrier is arranged to move along a track 6 formed by, e.g., rails with the help of conventional drive means. The stacker carrier 5 is equipped with a lift device capable of moving the units with their pallets into the storage stacks 3 and off the storage stacks, respectively. Each storage row is situated between a pair of adjacent rails 6 forming a track, whereby the storage row is laid between the wheeled legs of the stacker carrier. The storage system further includes a unit handling arrangement 7. This unit handling arrangement is provided with transfer means for receiving a [strapped]

stacked unit 2 from e.g., the board manufacturing lines and forwarding the same to further handling.

Please **amend the paragraph beginning on page 5, line 3**, as follows:

The apparatus according to the invention is principally characterized by lift units 23, 24 adapted to the opposite sides of the stacker carrier, said lift units being individually movable and arranged to cooperate so as to elevate/lower the [strapped] stacked units of boards resting on a support bed 4. The lift unit 23, 24 includes load support members 31 and, respectively, the support bed 4 includes mating members 53 for locking the support bed 4 to the lift units 23, 24 at least for the duration of a lifting operation. The load support members 31 and the mating members 53, 54 are provided with [interlockingly] interlocking mating shapes. For this purpose, the load support [member] members 31 may be provided with, e.g., a bracket part 32 extending at a right angle in the horizontal plane during the lifting operation.

IN THE CLAIMS:

Please **amend claims 1-18** as follows:

1. (Amended) An apparatus for handling [strapped] stacked units of boards, said apparatus comprising a stacker carrier (5) capable of moving [the strapped] a plurality of stacked units (2) placed on a support bed (4) in a storage area into storage stacks and off from said storage stacks, respectively, [characterized by] having lift units (23, 24) adapted to

the opposite sides of said stacker carrier (5), said lift units being rotatably mounted on pivot shafts (39, 40) and individually movable and arranged to cooperate so as to elevate/lower the [strapped] stacked units of boards resting on said support bed.

2. (Amended) An apparatus according to claim 1, [characterized in that the] wherein each of the plurality of lift [unit] units (23, 24) includes load support members (31) and, respectively, the support bed (4) includes mating members (53) for locking the support bed (4) to the lift units (23, 24) at least for the duration of a lifting operation.

3. (Twice amended) An apparatus according to claim 1, [characterized in that] wherein said load support members (31) and said mating members (53, 54) are provided with [interlockingly] interlocking mating shapes.

4. (Twice amended) An apparatus according to claim 1, [characterized in that] wherein each of said support [member] members (31) is provided with a protruding part (32) forming an angle with the horizontal plane during the lifting operation.

5. (Twice amended) An apparatus according to claim 1, [characterized in that] wherein each of said lift units (23, 24) is actuated by two drive shafts driving lift means (25, 26), such as lift chains, and that said drive shafts are arranged to be driven by [a] at least one drive unit (27) equipped with a variable-frequency inverter and an angular pulse encoder or a similar position transducer.

6. (Twice amended) An apparatus according to claim 1, [characterized in that] wherein said lift units (23, 24) are equipped with at least one drive unit, and when the number of [said actuator means] drive units (27) is larger than one, the first one of said [actuator means] drive units is a so-called master [actuator] drive unit, and the others are so-called slave [actuators] drive units.

7. (Amended) [Support] A support bed [for use in] according to claim 1, [characterized in that] wherein at least two opposite edges of the support bed (4) are provided with mating members (53, 55) capable of locking said support members (31) of said lift units to said support bed (4).

8. (Amended) [Support] A support bed [for use in] according to claim 1, [characterized in that] wherein said mating members of said support bed (4) are formed by bracket edges (53, 55) slanted downward by an angle (α) from the horizontal plane.

9. (Amended) An apparatus according to claim 2, [characterized in that] wherein said load support members (31) and said mating members (53, 54) are provided with [interlockingly] interlocking mating shapes.

10. (Amended) An apparatus according to claim 2, [characterized in that] wherein each said support member (31) is provided with a protruding part (32) forming an angle with the horizontal plane during the lifting operation.

11. (Amended) An apparatus according to claim 3, [characterized in that] wherein said each support member (31) is provided with a protruding part (32) forming an angle with the horizontal plane during the lifting operation.

12. (Amended) An apparatus according to claim 2, [characterized in that] wherein each of said lift units (23, 24) is actuated by two drive shafts driving lift means (25, 26), such as lift chains, and [that] said drive shafts are arranged to be driven by a drive unit (27) equipped with a variable-frequency inverter and an angular pulse encoder or a similar position transducer.

13. (Amended) An apparatus according to claim 3, [characterized in that] wherein each of said lift units (23, 24) is actuated by two drive shafts driving lift means (25, 26), such as lift chains, and [that] said drive shafts are arranged to be driven by a drive unit (27) equipped with a variable-frequency inverter and an angular pulse encoder or a similar position transducer.

14. (Amended) An apparatus according to claim 4, [characterized in that] wherein each of said lift units (23,24) is actuated by two drive shafts driving lift means (25,26), such as lift chains, and [that] said drive shafts are arranged to be driven by a drive unit (27) equipped with a variable-frequency inverter and an angular pulse encoder or a similar position transducer.

15. (Amended) An apparatus according to claim 2, [characterized in that] wherein said lift units (23, 24) are equipped with at least one drive unit (27), and when the number of said [actuator means] drive units (27) is larger than one, the first one of said [actuator means] drive units is a so-called master [actuator] drive unit and the others are so-called slave [actuators] drive units.

16. (Amended) An apparatus according to claim 3, [characterized in that] wherein said lift units (23, 24) are equipped with at least one drive unit (27), and when the number of said [actuator means] drive units (27) is larger than one, the first one of said [actuator means] drive units is a so-called master [actuator] drive unit and the others are so-called slave [actuators] drive units.

17. (Amended) An apparatus according to claim 4, wherein said lift units (23, 24) are equipped with at least one drive unit (27), and when the number of said [actuator means] drive units (27) is larger than one, the first one of said [actuator means] drive units is a so-called master [actuator] drive unit and the others are so-called slave [actuators] drive units.

18. (Amended) An apparatus according to claim 5, [characterized in that] wherein when the number of said [actuator means] drive units (27) is larger than one, the first one of said [actuator means] drive units is a so-called master [actuator] drive unit and the others are so-called slave [actuators] drive units.